AMENDMENTS TO THE CLAIMS

1. (Original) A transmitter, comprising:

(a) first and second convolutional encoders;

(b) first and second inputs connected to said first and second convolutional encoders respectively;

(c) first and second outputs; and

(d) a switch designed to perform the following alternatively during successive baud periods:

(1) connect said first input to said first output through said first convolutional encoder while connecting said second input to said second output through said second convolutional encoder during said baud period; and

(2) connect said first input to said second output through said first convolutional encoder while connecting said second input to said first output through said second convolutional encoder.

2. (Original) The transmitter of claim 1, wherein said first and second convolutional encoders are trellis encoders.

3. (Original) The transmitter of claim 1, wherein said first and second outputs are each wire pairs.

4. (Currently Amended) The transmitter of claim 1, wherein said convolutional encoders and said switch are implemented with software that is executed [[with]] by a processor.

5. (Original) The transmitter of claim 1, further comprising first and second mappers

connected between said first and second convolutional encoders and said first and second

outputs, respectively, said first and second mappers configured to receive first and second data

symbols, respectively, and define therefor first and second pluralities of bits, respectively, said

first and second pluralities being equal or different in number so that data rates associated with

said first and second outputs can be defined as equal or different.

6. (Original) The transmitter of claim 1, further comprising first and second modulators

connected to said first and second convolutional encoders for encoding digital data upon an

analog signal for communication onto said first and second outputs, respectively.

7. (Original) The transmitter of claim 1, wherein said first and second inputs are

connected to the same data terminal equipment.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Previously Presented) A transmitter comprising:

means for convolutionally encoding each data stream of a plurality to produce a plurality

of convolutionally-encoded data streams;

means for interleaving data segments from said convolutionally encoded data streams to

produce a plurality of interleaved convolutionally-encoded data streams;

means for transmitting said interleaved convolutionally-encoded data streams onto a

plurality of separate communication paths; and

a switching means for alternatively performing steps (1) and (2) hereafter during

successive baud periods:

(1) connecting a first input to a first output through a first convolutional encoder while

connecting a second input to a second output through a second convolutional encoder during said

baud period; and

(2) connecting said first input to said second output through said first convolutional

encoder while connecting said second input to said first output through said second

convolutional encoder.

12. (Original) The transmitter of claim 11, further comprising:

means for receiving first and second symbols from said first and second outputs,

respectively; and

means for independently defining first and second data rates for said first and second

outputs by defining first and second pluralities of bits for said first and second symbols,

respectively, said first and second pluralities being equal or different in number so that said first

and second data rates associated with said first and second outputs can be defined to be equal or

different.

13-15. (Cancelled).

16. (Previously Presented)   A transmitter comprising:

means for convolutionally encoding each data stream of a plurality to produce a plurality

of convolutionally-encoded data streams;

means for interleaving data segments from said convolutionally encoded data streams to produce a plurality of interleaved convolutionally-encoded data streams, each convolutionally-encoded data streams divided into interleaved data segments; and

means for transmitting said interleaved convolutionally-encoded data streams onto a plurality of separate communication paths; and

means for independently defining data rates on said paths by separately defining a number of bits for each of said interleaved data segments.

17. (Cancelled)

18-19. (Cancelled)

20. (Currently Amended)   A method for transmitting data, comprising the steps of:

convolutionally encoding each of a plurality of data streams to produce a plurality of convolutionally-encoded data streams;

interleaving data segments from said convolutionally-encoded data streams to produce a plurality of interleaved convolutionally-encoded data streams; [[and]]

transmitting said interleaved convolutionally-encoded data streams onto a plurality of separate communication paths; and

alternatively performing steps (1) and (2) hereafter during successive baud periods:

(1) connecting a first input to a first output through a first convolutional encoder while connecting a second input to a second output through a second convolutional encoder during said baud period; and

(2) connecting said first input to said second output through said first convolutional

encoder while connecting said second input to said first output through said second

convolutional encoder.

21. (Previously Presented)   The method of claim 20, further comprising the steps of:

receiving first and second symbols from said first and second outputs, respectively; and

independently defining first and second data rates for said first and second output by

selectively defining first and second pluralities of bits for said first and second symbols,

respectively, said first and second pluralities being equal or different in number so that said first

and second data rates associated with said first and second output can be defined to be equal or

different.

22-24. (Cancelled)

25. (Previously Presented)   A method comprising the steps of:

convolutionally encoding each of a plurality of data streams to produce a plurality of

convolutionally-encoded data streams;

interleaving data segments from said convolutionally-encoded data streams to produce a

plurality of interleaved convolutionally-encoded data streams, each convolutionally-encoded

data streams divided into interleaved data segments;

transmitting said interleaved convolutionally-encoded data streams onto a plurality of

separate communication paths; and

independently defining data rates on said paths by separately defining a number of bits

for each of said interleaved data segments.

26-54. (Cancelled).

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55-66. (Cancelled)

67-69. (Cancelled)

70. (Previously Presented)   The transmitter of claim 11, wherein said convolutional encoding means performs trellis encoding.

71. (Currently Amended)   The transmitter of claim [[12]] 11, wherein said separate communication paths are each wire pairs.

72. (Cancelled)

73. (Previously Presented)   The method of claim 20, wherein said step of convolutional encoding includes the step of performing trellis encoding.

74. (Previously Presented)   The method of claim 20, wherein said communication paths are each wire pairs.

75. (Currently Amended)   The method of claim 20, wherein said step of convolutional encoding is implemented with software that is executed [[with]] by a processor.

76. (Previously Presented)   The transmitter of claim 11, wherein said separate communication paths are each wire pairs.

77. (Previously Presented)   The transmitter of claim 11, wherein said means for convolutionally encoding and said means for interleaving are implemented with software that is executed with a processor.

78. (Previously Presented)   The transmitter of claim 11, further comprising a means for mapping connected between said means for convolutionally encoding and said means for transmitting, said means for mapping configured to receive a data symbol and define therefor a plurality of bits.

79. (Previously Presented)   The transmitter of claim 11, further comprising first and second means for modulating connected to said means for convolutionally encoding for encoding digital data upon an analog signal for communication onto said first and second outputs, respectively.

80. (Previously Presented)   The transmitter of claim 11, wherein said first and second inputs are connected to the same data terminal equipment.

81. (Previously Presented)   The method of claim 20, wherein said first and second inputs are connected to the same data terminal equipment.

82. (Previously Presented)   The method of claim 25, wherein said step of convolutional encoding includes the step of performing trellis encoding.

83. (Previously Presented)   The method of claim 25, wherein said communication paths are each wire pairs.

84. (Previously Presented)   The method of claim 25, wherein said step of convolutional encoding is implemented with software that is executed with a processor.

85. (Previously Presented)   The method of claim 25, wherein each of said plurality of data streams originates from the same data terminal equipment.